Museum & Visitor Center Exhibit Planning, Design, and Production Process

Flowchart (For detailed requirements see HFC Exhibit Planning & Design and Fabrication specifications)

Pre-Design

Pre-Design focuses on preparing a solid foundation for all work that follows, insuring that the project is logically structured and its goals are understood and realistically attainable. Project team members and stakeholders are identified and their roles defined.

Schematic Design

Alternative schemes are explored for organizing both the interpretive content and physical layout of the exhibits. By the end of Schematic Design, a preferred alternative has been selected and major stories, exhibit elements and presentation techniques are illustrated and described.

Design Development

All major details of the project are accounted for. Design and content are integrated into coherent media presentations. Complex media elements requiring further development are fully described. The exhibit's physical structure and operational characteristics are established.

Production Documents

Technical drawings and specifications are completed, communicating details necessary for potential exhibit fabricators to understand, price, and begin work on the project. Pre-production planning and design tasks are initiated and coordinated with the exhibit production schedule.

Production Support

The planning and design firm may provide creative and technical support during production, including follow-ons to complete development of specific exhibit elements, and review and direction to insure adherence to the original design intent.

Content Specialties

Acquisition of specialized exhibit content may occur in different ways to meet the project's requirements. Some of these tasks may be beyond the capabilities of the primary planning, design, and production contractors, requiring other contractors or client staff involvement. The work is time consuming, so it should begin as soon as specific requirements have been finalized.

Original Art

Original illustrations, maps, and photographs may be produced under a separate contract or subcontracted through the planning and design or production contracts.

AV Programs

Audiovisual and interactive multimedia programs are often produced under a separate contract.

Artifact Preparation

For organizations with the capability, this work is often performed by in-house staff. It may be contracted if necessary.

Image Acquisition

Reproducible images and their use rights may be acquired directly by client staff or by the planning and design contractor.

Custom Elements

Items like models, sculpure, taxidermy, and specialty electronics are often subcontracted through the exhibit producer but may also be contracted for separately.

Building Design

Close coordination between the exhibit contractor and the architect is required during design phases to insure that the design of the exhibit space and the exhibits are compatible. Decisions must be made regarding space configuration, lighting, power, and other exhibit/architectural interface issues.

Production Contract Award

Postaward

The postaward meeting and site visit provide important information and direction to the exhibit fabrication contractor to supplement the information in their contract documents.

Submittals

Shop drawings, proofs, and samples are submitted by the contractor for approval. Regular communication between the contractor and client is critical as details for most exhibit elements must be agreed upon prior to shop fabrication to avoid costly rework later.

Production

Exhibit structures are fabricated, graphics are printed and mounted, equipment is purchased, and all elements of the exhibition are integrated in preparation for installation.

Shop Inspection

All work that can be completed off-site is finished and set up in the fabricator's shop for inspection prior to shipment to the installation site.

Installation

Exhibit elements are delivered to the site in as complete a state as possible to minimize the amount of on-site work. Since installations are costly and labor-intensive, the contractor must carefully coordinate the sequence of work so that delays are minimized.

Closeout & Warranty

Important media resources acquired to create exhibit elements are archived during the closeout period. New exhibits typically include a one-year contractor's warranty for defects in materials, and workmanship.

Building Construction, Rehab, or Prep-Work

Most construction work involving the building structure, finishes, and utilities falls outside the scope of the typical exhibit production contract. However, close communication regarding construction details and completion schedules is required between all parties to insure a successful installation.

Museum / Visitor Center Exhibit Planning and Design Process

Summary Description (For more detailed requirements see Harpers Ferry Center Standard Planning and Design Specifications)

Pre-Design

Pre-Design focuses on preparing a solid foundation for all work that follows, insuring that the project is logically structured and its goals are understood and realistically attainable. Project team members and stakeholders are identified and their roles defined. Pre-Design includes these major tasks:

Pre-Design

Review planning documents.

Conduct scoping study at site.

Identify existing media resources.

- Develop Resource Package Abstract.

Evaluate architectural space.

Conduct Exhibit Planning Workshop.

Develop Project Brief including:

- Current overview of project, including updated information and understandings.
- Analysis of all project goals in terms of their effect on the development and successful completion of the exhibit.
- Analysis of the media budget (including Class C cost estimate), project schedule, and all other known parameters affecting the development and successful completion of the project.

Conduct Front-End Evaluation.

Schematic Design

Alternative schemes are explored for organizing both the interpretive content and physical layout of the exhibits. By the end of Schematic Design, a preferred alternative has been selected and major stories, exhibit elements and presentation techniques are illustrated and described. Schematic Design includes two sub-phases:

Schematic I

Conduct content research.

Develop Resource Package Level I.

Conduct Charette.

Develop Design Alternatives including:

- Bubble diagrams.
- Written descriptions.
- Preliminary sketches.
- Class B and life-cycle cost estimates.

Schematic II

Participate in NPS Value Analysis process.

Develop Preferred Alternative including:

- Written exhibit walkthrough.
- Overall design approach.
- Floor plan with individual exhibit areas & major elements identified.
- Sample elevations.
- Conceptual renderings / visualizations.
- Resource Package Level II (content to be used in each exhibit identified).
- Updated Class B and life-cycle cost estimates for Preferred Alternative.

Design Development

All major details of the project are accounted for. Design and content are integrated into coherent media presentations. Complex media elements requiring further development are fully described. The exhibit's physical structure and operational characteristics are established. Design Development includes two sub-phases:

Design Development I

Develop design including:

- Detailed floor plan and elevations.
- Sample graphic layouts / typography.
- Material, finish, and color proposals.
- Architectural modifications.

Develop content including:

- Text Level I (titles and descriptions).
- Identify major graphics and artifacts.
- Describe AV and interactive elements.
- Establish Content Management System (i.e., database, numbering system).

Design Development II

Develop all content in detail including:

- Text Level II (all text in draft form).
- Specify all graphic images and artifacts.
- Finalize AV / interactive treatments.
- Develop Reference Packages for specialized exhibit elements.

Create Graphic Layouts for all exhibits.

Update Exhibit Design Drawings.

Develop AV and interactive equipment specs.

Refine Class B and life-cycle cost estimates.

Verify all acquisition and treatment requirements for artifacts and display objects.

Conduct Formative Evaluation.

Production Documents

Technical drawings and specifications are completed, communicating details necessary for potential exhibit fabricators to understand, price, and begin work on the project. Pre-Production planning and design tasks are initiated and coordinated with the exhibit fabrication schedule. This phase includes these major tasks:

Document Preparation

Finalize Exhibit Design Drawings.

Prepare technical specifications and cut-sheets.

Update Graphic Layouts.

Material and finish samples.

Production Schedules.

Final Reference Packages for specialized exhibit elements in fabricator's scope of work.

Class A Production Estimate and updated life-cycle cost estimate.

Pre-Production

Develop completion schedule for all pre-production and production support tasks.

Text Level III (finalize all text).

Acquire graphics.

Graphic Production including:

- High-resolution scanning.
- Image manipulation.
- Production-ready files.

Develop scopes of work and finalize Reference Packages for specialized elements NOT in exhibit fabricator's scope of work.

Initiate AV and interactive program production.

Production Support

Work in this phase includes creative and technical support during fabrication of the project, including Planning and Design Follow-ons required to complete development of specific exhibit elements, and Fabrication Support to insure adherence to the project's design intent. This phase includes these major tasks:

Planning and Design Follow-ons

Prepare all design and content revisions required for production.

Create original graphic content including:

- Original illustrations.
- Original photography.
- Original and adapted maps.

Provide creative direction to NPS contractors including:

- Illustrators.
- Photographers.
- Model makers.
- AV and interactive producers.

Fabrication / Installation Support

Review and comment on Exhibit Fabricator's submittals including:

- Shop drawings.
- Samples.

Participate in shop inspections.

Installation support including:

- On-site art direction.
- Focusing of lighting fixtures.

Update Content Management System data.

Support Summative / Remedial Evaluation.

Museum / Visitor Center Exhibit Production Process

Summary Description (For more detailed requirements see Harpers Ferry Center Standard Exhibit Fabrication Specifications)

Postaward

The Postaward Meeting and Site Visit provide important information and direction to the exhibit fabrication contractor to supplement the information in their contract documents. It is usually accomplished in one work day.

Typical Agenda for Postaward Meeting

Conduct a general review of the project, including schedule.

Review exhibit design. Discuss contractor concerns or questions.

Provide Government-furnished reference materials to contractor. Conduct a review of these references.

Contractor documents exhibit space by taking measurements, reference photographs, and notes on existing conditions. Potential problems are identified.

Contractor inspects, measures, and takes reference photographs of artifacts to be mounted by the contractor.

Submittals

Shop drawings, proofs, and samples are submitted by the contractor for approval. Regular communication between the contractor and client is critical as details for most exhibit elements must be agreed upon prior to shop fabrication to avoid costly rework later.

Typical Submittals

Fabrication details (shop drawings). These add required construction detailing not included in the original design drawings.

Color and materials samples. There may be slight changes in colors and materials from the original design, associated with the fabrication drawings.

Catalog Cuts - Manufacturer's information from printed or on-line catalogs.

Graphic Proofs - Print-outs of digital graphics, usually inkjet, for review of text and visual effect of colors, photos and art. Proofs may be in a different output than the final media, or at a smaller scale. Consequently, other samples may be needed to check actual colors or other characteristics.

Audiovisual technical drawings - Requirements for power and signal wiring and other technical details for AV equipment installation.

Fabrication

Most exhibit elements are fabricated either in the contractor's shop or by specialty subcontractors.
Complex project management skills are required to coordinate production of graphics, 3-D structures, electronic media, lighting, and curatorial elements.

Typical Elements to be Fabricated or Purchased

Preparation of production digital graphic files and output of digital graphics.

Fabrication of structures, including artifact cases, panels, walls, platforms, information desks, benches, audiovisual kiosks, etc.

Models, including scale models, sculpted or cast human figures, natural history models, taxidermy or freeze dried animals, architectural models, mechanical interactive exhibits.

Fabrication of custom artifact mounting hardware.

The contractor acquires audiovisual hardware and tests it in their shop, prior to installation.

Building Prep

Most changes to the building structure, finishes, and utilities fall outside the scope of the typical exhibit fabrication contract. However, detailed coordination between the exhibit contractor and those responsible for building prep work is required to insure a successful installation.

Typical Building Preparation Elements

Demolition / removal of old exhibits or other furnishings.

New finishes for walls, floors, ceilings, and trim work as required.

Changes or additions to electrical circuits, outlets, conduit, fire alarms, emergency exit lights, security system, and other work requiring a licensed electrician.

Changes or additions to room lighting, such as installation of track lighting for the exhibits.

Preparation of space for audiovisual equipment closet; installation of conduit for audiovisual equipment wiring.

Changes to HVAC system to increase capacity when needed, and to move vents, ducts, or thermostats to accommodate new exhibit structures.

Installation

During this phase, the goal is to deliver the exhibit elements in as complete a state as possible and minimize the amount of on-site work to be done. Installations are costly and labor-intensive. The contractor must carefully coordinate the sequence of installation so that delays are minimized.

Typical Phases in an Exhibit Installation

Minor building prep work not previously completed by others.

Delivery of exhibits. Set up staging area for unloaded exhibit elements.

Install large structures, such as platforms, walls, cases, etc.

Install large graphic panels and murals.

Install smaller graphics, AV equipment, models, interactive exhibits.

Clean work site of debris and dust, clean artifact cases, install artifacts, perform all other conservation requirements, and seal cases.

Aim and adjust lighting fixtures.

Walk-through inspection of completed exhibits. Develop punch-list.

Supply maintenance manual and train staff in exhibit operation and maintenance.

Correct punch-list items.

Photograph completed exhibition.

Closeout/Warranty

New exhibits typically include a one-year contractor's warranty for defects in materials and workmanship. A contingency fund may be established to resolve latent design defects. Important media resources acquired to create exhibit elements are archived during the closeout period.

Typical Phases in the Closeout, Warranty Period

Contractor submits a closeout package including all Government-furnished materials, and materials generated by the contractor to create the exhibits, such as digital layouts, and "as-built" fabrication drawings. A duplicate copy of the maintenance manual is included in the closeout package.

Graphic source material is checked to verify completeness, and filed for future exhibit rehabilitation.

Quality issues with the exhibits are addressed under warranty. Other exhibit enhancements may be accomplished through a contract modification.

Photographs and data such as exhibit size and cost are kept on file for future reference by management.